

SHELL
DEER PARK MANUFACTURING COMPLEX
REFINERY

FIRE AND SAFETY PERMITS
(HOT WORK PERMITS)

SAFETY S-102
PAGE 1 OF 7
OCTOBER 4, 1977

1. GENERAL INFORMATION

All work performed by nonoperating personnel in Refinery operating areas must be authorized by appropriate operating personnel. This authorization will be in accordance with the procedures set forth in this order or in the companion Refinery Safety Order S-103, Departmental Work Permits. The purpose of both Safety Orders is to establish standardized authorization procedures for all work in operating areas. The procedures are intended to provide the communications and job preparations necessary to ensure safe work conditions. The specific authorization procedures to be followed depend on the type of work to be performed.

Safety and the application of safe work practices within the workplace are the responsibility of the line organizations.

Operating Departments are responsible for maintaining a safe work area and for preparing process equipment to allow work to be performed safely.

Maintenance - North is responsible for the application of safe work practices and procedures during the execution of maintenance and/or construction work.

Safety Department provides expertise and staff support in the field of safety and provides an independent safety auditing function.

2. TYPES OF WORK REQUIRING FIRE AND SAFETY PERMITS

As a general rule, high-risk level work in operating areas should be avoided, where practicable, by relocating the work to unrestricted areas. This order recognizes that certain work with identifiable risk levels exists and must be performed inside operating areas.

Basically, Fire and Safety Permits are required for all work which may result in producing sparks, work which requires generating an arc or flame, or work which requires personnel entry into a confined space or any other area where there is poor ventilation.

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A Fire and Safety Permit is required before starting the types of work described below, except when such work is performed in the shops and other specifically designated areas. It should be noted that such a Permit is required whether the work is performed by operating or maintenance personnel.

- (1) Flame producing tasks such as gas welding, gas torches, melting pots, lead burning, metallizing, electric welding, or any other flame. A Fire and Safety Permit is required in shops when welding, burning, etc. is to be performed on closed equipment (pumps, vessels, etc.), whether or not such equipment has been in service.
- (2) Personnel entry into enclosed or confined spaces, including but not limited to tanks, vessels, towers, furnace fireboxes, column skirts, sewer and electrical manholes, or lube oil reservoirs, for any purpose.
- (3) Spark producing tasks such as sawing, chipping, grinding, concrete-breaking, sand blasting, etc. where flammable materials may be present.
- (4) Operation of spark producing electrical equipment such as electric drills, portable electric motors, open electric switches, ordinary electric plug-in connections, soldering irons, and camera flash equipment, where flammable materials may be present.
- (5) Drilling on tanks, vessels, lines, pumps, or other closed equipment.

3. DEFINITIONS

Throughout the permit issuing procedures that follow, "Engineering Foreman" is used to denote Shell or contractor supervisory personnel responsible for the maintenance and/or construction job for which a Fire and Safety Permit is required. The Engineering Foreman (or contractor supervisory personnel) may, at his discretion, delegate to the craftsmen the authority to sign and accept the permit at the time the job is to begin. "Operations" is generally used to denote supervisory personnel in Operations; however, the Operations Foreman, at his discretion, may delegate to an Operator the authorities outlined in the permit issuing procedures below.

During the 3-11 and 11-7 shifts and during weekends and holidays, the Refinery Supervisor will, at the discretion of the Safety Department, assume the responsibilities and authorities specified for the Safety Inspectors in the procedures below.

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4. PROCEDURES FOR ISSUING FIRE AND SAFETY PERMITS

Attachment I shows a facsimile of the Fire and Safety Inspection Permit form. The actual permit form consists of three copies (the original white copy, a yellow copy, and a pink copy). The copies of the permit shall be handled as follows:

White (Original) Copy - Given to the employee or employees doing the work.

Yellow Copy - Given to the operating department. This copy should be posted in the control room on a prominent "permit board" specifically designated for posting of Fire and Safety Permits.

Expired permits and completed permits shall be retained on a designated area of the permit board for pick-up daily by the area safety inspector.

Pink Copy - Retained by the Safety Department. This copy (and the corresponding yellow copy) shall be retained for a period of two years.

Step 1: Initiating Permit Request

- A. Maintenance - North foreman or other supervisory personnel responsible for the maintenance and/or construction job to be performed shall initiate the request for a Fire and Safety Permit by contacting the Safety Department.
- B. The individual initiating the permit request shall inform Operations that a job requiring a Fire and Safety Permit is to be performed and that the Safety Department has been contacted.
- C. In order to implement the procedures for issuing Fire and Safety Permits in an orderly manner, it is essential that jobs requiring this type of permit be properly planned. The individual initiating the permit request should inform the Safety Department and Operations of the request as early as practicable to ensure that safe working conditions are agreed to in advance of the actual need for the permit.

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Step 2: Setting Job Conditions

- A. Operations and the Safety Inspector will jointly decide on the unit or equipment conditions which must be met to achieve safe working conditions. Operations and the Safety Inspector are encouraged to include the Engineering Foreman in these discussions.
- B. The Engineering Foreman and Safety Inspector will discuss the safety aspects pertinent to the maintenance or construction procedures to be employed.
- C. In cases where the proper safety procedures and the necessary job and unit preparations are well established, the discussions between Operations, Maintenance - North and Safety, as outlined in Steps 2A and 2B, may not be required.

Step 3: Achieving Conditions

- A. Operations will be responsible for achieving the plant and process equipment conditions specified in Step 2.
- B. The Engineering Foreman will be responsible for achieving the job preparation conditions specified in Step 2.

Step 4: Issuing of Fire and Safety Permit

- A. When the equipment preparations specified in Step 2 have been completed, Operations will request the Safety Inspector to perform an independent and mandatory audit to ensure that all necessary safety precautions have been met.
- B. The Safety Inspector will fill out and sign the permit when Step 4A is completed. The Safety Inspector will write on the permit any special instructions, conditions or precautions to be observed. The period of time the permit is to be in effect will also be written on the permit by the Safety Inspector (See Step 7: Continuation of Permit, for additional information on duration of the permit).
- C. When Step 4B is complete, Operations will also sign the permit.
- D. Steps 4B and 4C will occur at the work location.

This requirement may be waived at the discretion of the Safety Department for low-risk jobs (e.g., sawing, chipping, cold cutting metal) in remote areas which are not in close proximity to operating equipment or tanks and which are known to be free of underground piping.

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- E. The Operator responsible for the area in which the work is to be performed will also sign the permit to indicate that he is aware of the job and the safe work conditions specified. If operator responsibilities overlap in the immediate work area, each operator shall sign the permit.

Step 5: Beginning the Job

- A. The Engineering Foreman and the craftsman will accept and sign the permit at the work location to acknowledge that the safety precautions specified are fully understood.

Normally, this acceptance and signing of the permit will take place immediately following the issuing of the permit by Operations and the Safety Inspector. In cases where the craftsman and Engineering foreman are not at the work location when the permit is issued, it shall be the responsibility of the Engineering foreman or the craftsman to obtain the permit from Operations, inspect the work area and the safe work conditions, and sign the permit to acknowledge that the safety precautions are fully understood. An operations representative shall be present at the work location during this process. Operations shall then post the yellow copy on the control room permit board, and the work may begin.

- B. Unless otherwise specified on the permit by the Safety Inspector, a Safety Permit will automatically become invalid unless the work commences within two (2) hours of the time Steps 4B and 4C were completed. In this context "commence work" means the arrival of personnel at the job site with the tools required to begin performing the work.
- C. When appropriate to do so, it will be the responsibility of Operations (after consulting as required with the Safety Inspector and Engineering Foreman) to notify adjacent units of the pending work.

Step 6: Maintaining Conditions of Permit

- A. The Operator in whose area the work is being performed and the Operations Foreman are responsible for maintaining the conditions of the permit from the time it is originally signed by the Safety Inspector throughout the duration of the job, insofar as operating conditions or conditions in the general area around the work location are concerned.
- B. The Craftsmen performing the work and the Engineering Foreman are responsible for working within the conditions of the permit throughout the duration of the job, insofar as maintenance procedures are concerned.

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- C. The Safety Inspector shall make random audits of jobs in progress, as appropriate.

Step 7: Continuation of Permit

- A. A Fire and Safety Permit is valid so long as the permit conditions are maintained and so long as the procedural steps below are followed. The Operator, Operations Foreman, Craftsmen, Engineering Foremen or Safety Inspector are authorized to stop the job if permit conditions are not maintained. When it becomes necessary to discontinue a job, Operations and the Engineering Foreman shall be notified immediately.
- B. The permit shall be invalidated if the work is discontinued for more than a two-hour period, unless the permit specifically states otherwise.
- C. If the work extends beyond an Operations or Maintenance - North shift change, the appropriate Operations Foreman, Operator, and Craftsmen will initial the permit (yellow copy retained by Operations) at the beginning of their shift to indicate their understanding and responsibility for maintaining safe work conditions. Likewise, an Engineering Foreman that assumes responsibility for a job that has continued past a craft shift change shall also initial the permit. Maintenance personnel working continuously on the job past the normal shift change are not required to re-sign the permit.
- D. Fire and Safety Permits for continuous or around-the-clock jobs shall be renewed on the next daylight shift before 9:00 a.m.
- E. On occasion, safety inspectors may issue a permit that is valid "UNTIL COMPLETE", instead of specifying a particular time that the permit expires.

When "UNTIL COMPLETE" permits are issued for jobs that are worked continuously (i.e.-around the clock), the signing and renewing requirements of Steps 7C and 7D apply.

When "UNTIL COMPLETE" permits are issued for jobs that are worked intermittently (for example, on daylight shifts only), the permit must be validated prior to commencing work by redating and signing by the appropriate personnel. Appropriate personnel shall always include the operations representatives, and the craftsmen, and may include the Engineering Foremen and the Safety Inspector, as specified on the original permit by the Safety Inspector.

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Step 8: Completion of the Job

- A. The Craftsmen or Engineering Foremen will notify Operations when the job is complete and sign Operations' copy (yellow) of the Fire and Safety Permit. The operator will then write "COMPLETE" across the back of the yellow copy, and post it in the designated area of the permit board for pickup by the area safety inspector.

Attachment

Updating Responsibility
Manager Safety and Industrial Hygiene

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ATTACHMENT 1
FIRE AND SAFETY PERMIT FORM

01518 (Rev. 1/59) Printed in U.S.A.

FIRE AND SAFETY INSPECTION PERMIT

No. 99426



LOCATION _____

Date _____ 19 _____ Time _____ A.M. Permit _____ A.M.
Issued _____ P.M. Expires _____ P.M. _____ 19 _____

Permission is hereby granted to _____
to use _____
in connection with following work _____

SAFETY INSTRUCTIONS - _____

Craftsman _____ Fire and Safety _____
(Received Permit) _____
Craftsman _____ Operating _____
(Job Complete) _____ Engineering _____

NOTE: This permit will be void and must be renewed in case of accident or change of above conditions.

Safety Order S-102
Fire and Safety Permits
July 1, 1977

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ATTACHMENT 2

S-102 FIRE AND SAFETY PERMITS (OCTOBER 4, 1977)

The following questions/answers are intended as guidelines for uniform interpretation of S-102.

Q. 1: If a F&SP is required, is a departmental work permit (DWP) also required?

A. No. However, cold work being performed by maintenance personnel to prepare for issuing a F&SP will require authorization per S-103 - Departmental Work Permits. Similarly, cold work that continued after a F&SP is completed will require authorization per S-103.

Q. 2: Is it the intent of the language pertaining to delegation of "Engineering Foreman" or "Operations" (see Section 3 - definitions) that foreman will not normally be involved in the permitting process?

A. No. On the contrary, foremen will normally be involved in the permitting process, including initiating the permit request, setting job conditions, achieving conditions, issuing the permit, beginning the job, and continuation of permits. On occasion, the operating foreman may delegate portions of these activities to the appropriate operator; however, the foreman is at no time excluded from the permitting process, and is fully responsible for the activities of "operations" as set out in the order.

Likewise, the Engineering Foreman may delegate to the craftsman the authority to sign and accept the permit at the time the job is to begin. However, the Engineering Foreman is at no time excluded from the permitting process, and is fully responsible for the activities of the "Engineering Foreman" as set out in the order.

It should be understood that NO NEW PROCEDURE is envisioned by this language. The existing Refinery Safety Manual procedure states "Such permits are to be signed by the Safety Department and a supervisor, or delegated representative of the operating department in which the work is to be done, and by the workman (or his foreman) assigned to do the work."

Q. 3: Why is the operator required to sign the permit? Does this mean that the operator is responsible for the issuing of the permit and all the planning and safe work conditions?

A. The operator's signature is a procedure that insures good communication. It insures that no F&SP type work can proceed in any given operator's area without his knowledge. Further, it insures that he understands the safe work conditions prescribed on the permit. (See also question #18, pertaining to intended changes in the permit form that will clarify this situation.

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Q. 3. (Cont'd)

No new responsibility is implied by this operator signing procedure. The operator has been, and continues to be, responsible for maintaining the conditions of the permit, insofar as operating conditions or conditions in the general area around the work location are concerned (see Step 6A).

Q. 4. What happens if an operator refuses to sign a permit?

A. We can't imagine why an operator would refuse to sign a permit, since his signature is intended to insure that no F&SP can be issued in his area without his knowledge, and no new responsibilities are intended, or involved. In the event that an operator disagrees with the planning and safe work practices for a job, the matter should be discussed with his foreman and the safety inspector, who are responsible for specifying the safe work condition on the permit. Regardless of the outcome of these discussions, the operator should sign the permit to indicate that he understands the planning and safe work conditions.

Q. 5. Does the craftsman always sign the permit?

A. Yes.

Q. 6: Are there any exceptions to the requirement for issuing the permit at the work location for almost all work that requires a F&SP?

a. Yes, but only for low risk in remote areas, at the discretion of the safety inspectors, per Step 4D.

The order clearly envisions issuance and signing of the permit at the work location for almost all work that requires a F&SP.

Q. 7: Why must the work begin within a 2-hour period from the signing of the permit, unless otherwise specified on the permit by the safety inspector?

A. This procedure insures an increased measure of safety by minimizing the time lapse between the issuance of the permit at the work location, and the actual start of work. The two-hours is an arbitrary figure. The concept is that by providing a time limit, the probability of changed conditions is minimized. Obviously, the sooner work begins after the issuance of the permit, the higher the probability that safe work conditions have not changed.

Q. 8: If work does not begin within the two-hour starting window, what then?

A. The safety inspector will reinspect the work location, and change and initial the starting time on the yellow copy of the permit.

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Q. 9: Why is the permit invalidated if the work is discontinued for more than a two-hour period? If work has lapsed for more than a two-hour period, what then?

A. The answers to Q. 7 and Q. 8 apply.

Q. 10: For F&SP jobs that extend beyond craft shift change, does the Refinery Supervisor have to initial the permit in place of an Engineering Foreman?

A. No. Step 7C does require that an Engineering Foreman who specifically supervises a job that has continued past a craft shift change must initial the permit. This requirement does not apply to the Refinery Supervisor.

Q. 11: Why are permits for around-the-clock F&SP jobs renewed the following day? Why "prior to 9 a.m."? Does work continue pending renewal of the permit?

A. Permits are renewed the following day to insure that the planning and safe work precautions for the job are reviewed on a daily basis.

Work does continue, pending renewal of the permit before 9 a.m. Normally, safety inspectors will issue permits for new work beginning at the start of the shift, and then get around to renewing the permits on around-the-clock jobs prior to 9 a.m. Meanwhile, the actual work which had been in progress on evening and graveyard shifts should continue on the daylight shift, subject to the signing requirements at shift change as spelled out in step 7C.

Q. 12: Why does the new order use the phrase "UNTIL COMPLETE", instead of "JOB COMPLETE", for those permits that are issued for intermittent work (see Step 7E)?

A. The words "JOB COMPLETE", on a permit can be confusing, leading someone to believe that it means the job is complete! Therefore, the words "UNTIL COMPLETE" shall be used for this type of permit.

Also, Step 8A spells out the proper way to indicate that a job is complete, by writing "COMPLETE" across the back of the yellow copy, and posting it in the appropriate area on the permit board, for pick-up by the safety inspectors.

Q. 13: On a continuing job, or an "UNTIL COMPLETE" job, how can we keep all the initials straight on the yellow copy?

A. The permit may be turned over, the shift and date noted, and the initials added. When the back of the permit becomes full, or when the permit becomes illegible, a new permit should be issued.

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- Q. 14: If there is more than one craftsman doing the job, who signs?
- A. The primary craftsman, or as specified by the Engineering Foreman. If multi-crafts are involved (such as may occur in an entry permit), the lead craftsman from each craft shall sign.
- Q. 15: If an around-the-clock job continues on Saturday and Sunday, must the permit be renewed prior to 9 a.m.?
- A. Yes. Normally, the Refinery Supervisor will renew these permits.
- Q. 16: Do the procedures of S-102 apply to construction jobs in operating areas?
- A. Yes. The appropriate construction foreman performs the functions outlined for the "Engineering Foremen".
- (NOTE - special permitting procedures may be adopted for major construction in new areas.)
- Q. 17: If hot work in the field is interrupted for more than 2 hours by relocation of the hot work to a shop area, must the F&SP be renewed before hot work can begin again in the field?
- A. Yes. The F&SP is written for the hot work at the location. If a two hour lapse occurs, the permit must be renewed.
- Q. 18: Why can't the permit form be changed to provide a separate space for the operator and craftsman to sign, that will clarify the significance of their signing?
- A. This will be done. The revisions will be along the lines of separating the signatures into two categories. Namely, those that are "approvals to begin work" (operating foreman, safety inspector, engineering foreman); and those that "acknowledge job and safety requirements" (operator, craftsman). Pending the change in the forms, which will require several months, the operator should sign in the "operating" space on the form.

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